

REMARKS

The above amendments and following remarks are responsive to the points raised in the March 1, 2005 non-final Office Action. Upon entry of the above amendments, Claims 1, 7-9, 15, and 16 will have been amended, and Claims 1, 3-9, and 11-16 will be pending. No new matter has been introduced. Entry and reconsideration are respectfully requested.

Response to Rejection under 35 U.S.C. § 102(e)

Claims 1 and 9 have been rejected under 35 U.S.C. § 102(e) as being unpatentable over US Patent 6,521,392 to Yahiro. Applicants traverse this rejection.

Claims 1 and 9 have been amended to recite a charged-particle-beam exposure apparatus and a method of controlling a charged-particle-beam exposure apparatus, respectively, which includes a detecting unit that

“detects the intensity of the charged-particle beam at a plurality of locations on the plate in an area not utilized in exposing the substrate” (Claim 1),

and a detection step that

“detects the intensity of the charged-particle beam at a plurality of locations on a plate, configured to selectively pass the charged-particle beam for exposing a substrate, in an area not utilized in exposing the substrate” (Claim 9).

Applicants respectfully submit that Yahiro neither teaches nor suggests that (1) beam current detector 19 detects the intensity of the charged particle beam at a plurality of locations in an area not utilized in exposing the substrate, or (2) a detecting step that detects the intensity of the charged-particle beam at a plurality of locations in an area not utilized in exposing the substrate. As such, Claims 1 and 9 are distinguished over the applied prior art reference of

Yahiro. The above amendments to Claims 1 and 9 are consistent with the Examiner's statement for the indication of allowable subject matter, with respect to Claims 7, 8, 15, and 16, set forth in the last full paragraph on Page 4 of the May 1, 2005 non-final Office Action.

Accordingly, the rejection under 37 CFR § 102(e) should be withdrawn.

Response to Rejection under 35 U.S.C. § 103(a)

Claims 2-6 and 10-14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Yahiro. Applicants respectfully traverse this rejection.

The Examiner relies the teaching of Yahiro and admits that

“[w]hile Yahiro teaches to adjust the illumination optical system to make the intensity distribution more uniform at lines 41-51 in column 3, the patent does not describe the details of how such an adjustment is to be made”,

and opines that

“since there are only a few components in the illumination optical system, the determination that adjustment of the collimator lens(7), whether or not is electrostatic, produces the desired adjustment of the beam intensity distribution would have been a matter of routine experimentation.”

From here the Examiner merely concludes that

“It would have been obvious to a person having ordinary skill in the art to store a desired uniform intensity distribution as a reference value and to adjust the intensity distribution of the charged particles on the basis of the difference between the detected intensity distribution and the reference value so that the detected value becomes the reference value, either automatically or by measuring the intensity distribution and then separately making the adjustment. Such a technique is called a feedback loop and is well known in the art. It would have been obvious to a person having ordinary skill in the art to apply this feedback loop only if the difference between the detected intensity distribution and the reference value exceeds an allowable value in order to minimize the amount of adjustment actually performed so the time for exposure of the substrate could be increased.”

Applicants take reservation with the Examiner's comments regarding "routine experimentation" and "well known in the art." As such, Applicants respectfully that the Examiner specifically identify the prior art documents on which the Examiner's opinion and conclusions are founded.

Notwithstanding the above, dependent Claims 2-8 and 10-16, which depend from Claim 1 or Claim 9, are distinguished over Yahiro for at least the same reasons discussed above with respect to Claims 1 and 9. No where is it seen with the disclosure of Yahiro, where Yahiro advances any teaching, suggestion, or motivation that would render Applicants' claimed subject matter obvious to one of ordinary skill in the art at the time the Applicants' subject matter was invented.

Accordingly, the rejections under 35 U.S.C. § 103(a) should be withdrawn.

Allowable Subject Matter

Claims 7, 8, 15, and 16 have been objected to by the Examiner as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants concurs with the Examiner's finding and respectfully submit that the amended Claims 1, 7-9, 15, and 16 are also distinguished over the prior art.

CONCLUSION

Applicant respectfully submits that Claims 1-16 are in condition for allowance and a notice to that effect is earnestly solicited.

AUTHORIZATION

The Commissioner is hereby authorized to charge any fees which may be required for filing this Amendment and Request for Reconsideration to Deposit Account No. 13-4503, Order No. 1232-5215.

Respectfully submitted,

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